

Application No. 10/582,548
Paper Dated: January 28, 2010
In Reply to USPTO Correspondence of October 28, 2009
Attorney Docket No. 3163-061714

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) An electricity storage device, comprising a polymer electrolyte and polarizable electrodes,

the polarizable electrodes each comprising an interface with the polymer electrolyte, the polarizable electrodes being metal electrodes,

a negative electrode of the polarizable electrodes having, at its interface with the polymer electrolyte, a lithium alloy with a metal component contained in the negative electrode,

the lithium alloy being capable of releasing lithium ions through a reversible electrochemical oxidation-reduction reaction,

the negative electrode is formed in the polymer electrolyte such the polymer electrolyte includes the metal component and a polymer electrolyte component,

the metal component being rich in a region in a vicinity of an outer side of the polymer electrolyte, and

the polymer electrolyte being rich in a region in a vicinity of a center of the polymer electrolyte.

2. (Currently Amended) The electricity storage device according to claim 1, wherein the metal electrode as the negative electrode is a metal electrode whose components include one or more metals selected from the group consisting of gold, lead, tin-and, zinc, copper, silver, iron, and nickel.

3. (Original) The electricity storage device according to claim 1, wherein the metal electrode as the negative electrode is a gold electrode.

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4. (Original) The electricity storage device according to claim 1, wherein a positive electrode is composed of the same metal elements as the metal components of the metal electrode as the negative electrode.

5. (Original) The electricity storage device according to claim 1, wherein the lithium alloy is a lithium alloy which occurs by application of minus voltage to the metal electrode in a non-aqueous solution containing lithium ions.

6. (Original) The electricity storage device according to claim 1, wherein the polymer electrolyte is an ion exchange resin.

7. (Original) The electricity storage device according to claim 1, wherein the electricity storage device is an electrode assembly.

8. (Original) The electricity storage device according to claim 1, wherein a specific capacity of the electricity storage device is not less than 20 F/cm³.

9.-15. (Cancelled)

16. (New) The electricity storage device according to claim 1, wherein the negative electrode is constituted of a projecting part,
the projecting part is formed in a boundary region with the polymer electrolyte,
and

the projecting part is in the shape of at least one of a fractal, peninsula, island with a neck-shaped constriction, tree, mushroom, icicle, polyp, and coral.